7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

This section describes irreversible and irretrievable commitments of resources associated with the implementation of the proposed action or any of the alternatives analyzed in this EIS. A resource commitment is considered *irreversible* when primary or secondary impacts from its use limit future use options. Irreversible commitment applies primarily to nonrenewable resources, such as minerals or cultural resources, and to those resources that are renewable only over long time spans, such as soil productivity. A resource commitment is considered *irretrievable* when the use or consumption of the resource is neither renewable nor recoverable for use by future generations. Irretrievable commitment applies to the loss of production, harvest, or natural resources.

7.1 LAND

The construction and operation of the proposed transmission lines would require the commitment of land for the placement of towers, monopoles, and crossing structures, and for new access roads. This commitment would be irreversible for the life of the transmission line. While it is possible that these structures and roads could be removed and the natural landscape renewed, this is unlikely in the foreseeable future. While the proposed and alternative transmission line routes would involve the same kinds of irreversible land use, they vary in the amount of new land used (see Section 4.6). The proposed routes would be the shortest and would require the construction of the fewest towers. For the most part, they would make use of preexisting access roads. Only relatively short road extensions (spurs) to the new towers would require a new land commitment. Both the western and eastern alternative routes would require the grading of new access roads (Table 7.1-1).

TABLE 7.1-1 Irreversible and Irretrievable Resource Commitments

Resource	Proposed Routes	Western Alternative Routes	Eastern Alternative Routes
Steel lattice towers	50	70	56
Monopoles	9	12	9
A-frames	8	8	8
Conductor cable – mi (km)	27 (44)	34 (55)	29 (46)
New access roads and spurs[a] – ac (ha)	1.72 (0.7)	12.78 (5.2)	10.10 (4.1)
Work areas around towers[b] – ac (ha)	3.4 (1.4)	4.8 (1.9)	3.9 (1.6)

[a] Values represent soil disturbance for new spurs only, since there is an access road for the existing line that could be used for the proposed routes.

[b] Values include the area of permanent disturbance (201 ft^2) [18.7 m^2] for the footing excavation at each tower.

7.2 WATER

Limited amounts of water would be irretrievably consumed during construction of the transmission lines and in the operation of the power plants in Mexico that would serve the lines. Both the La Rosita Power Complex (LRPC) and Termoeléctrica de Mexicali (TDM) plants would consume water that would otherwise flow into the New River. Operating at full capacity, the LRPC would consume 7,170 ac-ft (10 ft^3/s) annually, and the TDM plant would consume 3,497 ac-ft (5 ft^3/s). This represents about 5.9% of the flow of New River water at the Calexico gage and would reduce the volume of water in the New River accordingly. However, since the main source of water for the U.S. reach of the New River is irrigation runoff from the U.S. side of the border, the effect on the volume of water decreases as the river flows north (see Section 4.2.1). In addition, since the plants must treat incoming water in order to use it, the waters they release into the New River actually improve water quality in the river. Construction of the proposed transmission lines would also require small amounts of water for the mixing of concrete and dust suppression.

Each of the alternative transmission line routes would cross the 100-year floodplain at Pinto Wash in an area where the floodplain divides into two arms. The three routes converge here, and all cross about the same amount of floodplain. The proposed routes would require the placement of two towers in the floodplain (Tower Location 21). The resulting loss of floodplain would be minor, about 201 ft^2 (18.7 m^2) per tower. The same minor loss of floodplain would be expected if either the western or eastern alternative routes were chosen (Section 4.2.4.2).

7.3 CONSTRUCTION MATERIALS

Construction of the transmission lines would also result in both the irreversible and irretrievable use of common construction materials. The materials used for constructing the towers and monopoles and the concrete for their anchors are ultimately recyclable but would remain an irreversible commitment of resources for the life of the project. The proposed routes would require the construction of 50 steel lattice towers, 9 steel monopoles, and 8 A-frame crossing structures. The western alternative routes would require the construction of 70 lattice towers, while the eastern alternative routes would require the construction of 56 towers. The concrete anchors for each lattice tower would require about 755 ft^3 (21 m^3) of concrete. The proposed routes would require about 27 mi (44 km) of conductor cable. The western alternative routes would require about 34 mi (55 km) of cable, and the eastern alternative routes would require about 29 mi (46 km) (Table 7.1-1).

Small quantities of fossils fuels would be irretrievably consumed during the construction and maintenance of the transmission lines. Aviation fuel would be required for the helicopters used to bring the lattice towers from Mexico. Diesel fuel and gasoline would be consumed by construction and maintenance equipment along the transmission lines. The consumption of fuel during the construction phase would be of relatively short duration. These procedures would require the consumption of a relatively small amount of fuel that would not constitute a long-term drain on local resources.

7.4 BIOLOGICAL AND CULTURAL RESOURCES

The construction and operation of the transmission lines would result in limited irreversible and irretrievable commitments of natural and cultural resources. The areas occupied by the footings or anchors for tower, monopole, and crossing structures, as well as the access roads, would be irreversibly removed from natural habitat for the life of the transmission lines. In addition, the disturbances of the desert soil surfaces in areas of temporary construction activity, such as work areas, pull sites, lay-down areas, and trenches, could result in changes that would be irreversible over the long term. Although some sensitive species might be affected by construction, it is unlikely that threatened or endangered species would be harmed. Habitat for the flat-tailed horned lizard, as well as habitat and burrows for the western burrowing owl (both BLM-designated species of concern), would be lost. However, the implementation of mitigation procedures during construction would make it unlikely that individual organisms would be destroyed (Section 4.4.4). Of the alternative transmission line routes, the western routes would be the longest, disturb the most amount of land, and result in the greatest loss of habitat (Table 7.1-1). The eastern routes would be shorter and would cross less sensitive habitat than the western routes. The proposed routes would result in the least new disturbance of habitat.

Cultural resources, such as archaeological sites, are nonrenewable resources. Their loss is irreversible. The proposed transmission line routes would closely follow an ancient lake shore frequented by prehistoric peoples who left a relatively dense area of archaeological remains. Two tower structures along the proposed routes fall within known archaeological sites determined to be eligible for inclusion in the NRHP by the California SHPO. Excavation for tower supports would irreversibly destroy portions of these sites. However, the California SHPO has approved a plan to mitigate the adverse effects from constructing tower supports at these two sites. It is likely that fewer archaeological resources would be affected by either of the alternative routes. The western alternative routes are laid out so that they would avoid most areas of high archaeological site density. These routes would run well above the ancient lakeshore. Conversely, the shorter eastern routes would lie below the ancient lake shore but would also avoid areas of known high archaeological site density.